



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/414,004 | 10/07/1999 | VICTOR KATSAP | 2925-0411P | 2693 |
| 7590 02/18/2004 | | | | |
| Harness Dickey & Pierce P L C P O Box 8910 Reston, VA 20195 | | | | |
| EXAMINER | | | | |
| FERNANDEZ, KALIMAH | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2881 | | | | |
| DATE MAILED: 02/18/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/414,004

Applicant(s)

KATSAP ET AL.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-56 and 58-70 is/are rejected.
- 7) ☒ Claim(s) 57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 54 objected to because it recites the limitation "said illumination component". There is insufficient antecedent basis for this limitation in the claim.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "lens array including an odd number of mesh grids, including two outer mesh grids having a curved shape" as in claim 57 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use, or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 41-42, 52-53, 58-59 and 69-70 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 4,338,548 issued to Bono et al.

3. Bono et al discloses an electron gun (12) including an electron assembly (or electron beam tube); and at least one lens array (11,21) placed in a drift space adjacent to said electron gun (see fig.1).
4. Bono et al discloses the lens array (21) for control the emittance of the electron gun by reduction of aberrations and astigmatism (col.2, lines 30-68).
5. As per claims 42 and 59, Bono et al discloses at least one lens array disposed (21) with the electron assembly (col.5, lines 56-65;see fig.2).
6. As per claim 58, Bono et al discloses supplying an electron beam with an electron gun (12) including an electron assembly (or tube)(col.1, lines 8-24); and placing at least one lens array (11,21) in a drift space, adjacent to the electron gun (12) (see fig.2).
7. As per claims 53 and 70, Bono et al discloses an EBAL apparatus (col. 2, line 36).
8. As per claims 52 and 69, Bono et al discloses transmission of the electron beam within the recited range (see fig.2).
9. As per claim 55, Bono et al discloses correcting the lack of coaxial symmetry (col.4, lines 45-51), thereby Bono et al discloses the production of a more diverging beam, which will inherently be coaxial symmetry (see col.2, lines 45-68;col. 7, lines 29-30).
10. Claims 41-42,47-49,58-59 and 64-66 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,013,963 issued to Ikegami et al.

Art Unit: 2881

11. Ikegami et al discloses an electron gun having an electron gun assembly as depicted in fig.2a (see col.1, lines 52-68).
12. Ikegami et al discloses at least one lens array (2-5 grids) located in the drift space on the electron gun assembly and adjacent to the gun (1).
13. Ikegami et al discloses said lens array for controlling (i.e. by focusing) emittance of said electron beam exposure tool (col.2, lines 36-49).
14. As per claims 42 and 59, Ikegami et al discloses at least one lens array (2-5) are placed in said electron gun assembly (see fig. 2a; col.3, lines 9-45).
15. As per claims 47-49 and 64-66, Ikegami et al discloses the employment of grids having a plurality of holes (i.e. mesh grids) (col.3, lines 46-65).
16. As per claim 58, Ikegami et al discloses supplying an electron beam with an electron gun (1) including an electron gun assembly depicted in fig. 2a; and placing at least one lens array (2-5) in a drift space, adjacent to the electron gun (1).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2881

18. Claims 43-46, 54 and 60-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bono et al as applied to claims 41 and 58 above, and further in view of US Pat No 5,376,792 issued to Schamber et al.

19. Bono et al teaches the claimed invention except for a liner.

20. However, Schamber et al teaches employment a liner in a replaceable electron gun (col. 4, lines 45-61).

21. It would have been obvious to an ordinary artisan to incorporate the teachings of Schamber et al into Bono et al since Schamber et al teaches the improve performance using a column liner (col.1, line 47-col.2, line 13).

22. As per claims 44 and 61, Schamber et al teaches vacuum-tightness (col.4, lines 54-61).

23. As per claim 54, Schamber et al teaches a liner tube connectable (or coupled) to the electron gun (col.4, lines 45-61).

24. As per claims 45-46 and 62-63, Schamber et al teaches coupling of the electron gun and liner by clamping (col.7, lines 20-52). In addition, Schamber teaches alternatively welding (col.4, line 30).

25. Claims 50-51,56 and 67-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bono et al as applied to claims 41 and 58 above, and further in view of US Pat No 5,059,804 issued to Fink et al.

26. Bono et al teaches the claimed invention except for a continuous foil.

27. However, Fink et al teaches the fabrication of micro lens made of foil (col.2, lines 52-59).

Art Unit: 2881

28. It would have been obvious to an ordinary skilled artisan to incorporate the teachings of Fink et al into Bono et al since Fink et al teaches increasing brightness (col.3, lines 41-63).

29. As per claim 56, the obvious combination of Bono et al and Fink et al would reasonably teach increasing the brightness by the recited factor (see col.3, lines 45-49).

Allowable Subject Matter

30. Claim 57 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

31. The following is a statement of reasons for the indication of allowable subject matter: A thorough search of the prior art yield no teaching or obvious suggestion of the arrangement of mesh grids as recited.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on Mon-Thrus between 8:30am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on 703-308-4116. The fax phone numbers for

Art Unit: 2881

the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf

October 27, 2002


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800